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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/001,986	10/31/2001	Henry Stephen Eilts	TI-32977	2814
23494	7590	09/06/2005	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			LIU, SHUWANG	
			ART UNIT	PAPER NUMBER
			2634	
DATE MAILED: 09/06/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/001,986	<b>Applicant(s)</b> EILTS ET AL.	
	<b>Examiner</b> Shuwang Liu	<b>Art Unit</b> 2634	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,10-13,21-23,25,26,28,34,35,38 and 39 is/are rejected.
- 7) ☒ Claim(s) 3,4,6-9,14-20,24,27,29-33,36 and 37 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/31/01</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 5, 10-13, 21-23, 25, 26, 28, 34, 35, 38 and 39 are rejected under 35 U.S.C. 102(e) as being anticipated by Magee (US 2003/0086508).

The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As shown in figures 1-2, Magee discloses a receiver system comprising:

(1) regarding claim 1:

a front end portion (12) that receives and digitizes a data signal having one or more training tones and one or more data tones; and

a channel estimator component (20 and 200) that utilizes the digitized data signal to provide a partial channel estimate that is combined with at least one other partial channel estimate to provide an aggregated channel estimate (0030).

(2) regarding claim 2:

the channel estimator component being adapted to update the aggregated channel estimate every K data signals, where K is the number of partial channel estimates forming a full channel estimate (0030).

(3) regarding claim 5:

the channel estimator component extracts training tones from the data signal and determines an average channel impulse response from the training tones, the average channel impulse response being utilized to determine the partial channel estimate (0028 and 0029).

(4) regarding claim 10:

the data signal being transmitted in a multicarrier modulation format (0022).

(5) regarding claim 11:

being implemented as part of a modem (0021 and 0068).

(6) regarding claim 12:

being implemented as part of a wireless communication system to the Internet (0068).

(7) regarding claims 13, 23, 25, 26, 28, 34, 35 and 38

extracting training tones and determined a channel impulse response (0023) as recited;

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an inverse Fast Fourier Transform (206) as recited;

a frequency shifting (216, 214, and 0036) as recited in claims 12, 23, 25, 28, 34, 35, and 38;

a Fast Fourier Transform (FFT) portion that receives a channel impulse response and

performs a Fast Fourier Transform on the channel impulse response to provide a partial channel estimate (0022, 0023, and 0030); and

a combiner that combines the partial channel estimate with at least one other partial channel estimate to provide an aggregated channel estimate (0030).

(8) regarding claim 21:

forming part of an application specific integrated circuit (it is inherent).

(9) regarding claim 22:

being implemented as executable instructions programmed in a digital signal processor (001 and 0041).

(10) regarding claim 39:

a full channel estimate provided in K number of data signals, where K is the number of partial channel estimates that form a full channel estimate (0030).

3. Claims 1, 10-13, 21, and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Klimovitch et al. (2002/0111142).

As shown in figures 1-5, Klimovitch et al. discloses a receiver system comprising:

(1) regarding claims 1 and 13:

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a front end portion (see figure 5) that receives and digitizes a data signal having one or more training tones and one or more data tones (0064-69);

a FFT as recited in claim 13 (0065-0069); and

a channel estimator component that utilizes the digitized data signal to provide a partial channel estimate that is combined with at least one other partial channel estimate to provide an aggregated channel estimate (0076).

(2) regarding claim 10:

the data signal being transmitted in a multicarrier modulation format (0004 and 0038).

(3) regarding claim 11:

being implemented as part of a modem (figure 5).

(4) regarding claim 12:

being implemented as part of a wireless communication system to the Internet (0115).

(5) regarding claim 21:

forming part of an application specific integrated circuit (it is inherent).

(6) regarding claim 22:

being implemented as executable instructions programmed in a digital signal processor (0115).

### ***Double Patenting***

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1, 13, 25, 34, and 38 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 5 of patent application 10/001986. Although the conflicting claims are not identical, they are not patentably distinct from each other because the broader application claims would have been obvious in view of the narrow issued claims (see *In re Emert*, 124 F.3d 1458, 44 USPQ2d 1149).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Allowable Subject Matter***

6. Claims 3, 4, 6-9, 14-20, 24, 27, 29-33, 36 and 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in

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independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shuwang Liu whose telephone number is 571 272-3036. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Shuwang Liu  
Primary Examiner  
Art Unit 2634

August 17, 2005